THE

MEDICAL AND SURGICAL REPORTER.

No. 960.] PHILADELPHIA, JULY 24, 1875. [Vol. XXXIII.—No. 4.

Original Department.

Communications.

SPERMATORRHŒA.

BY G. B. H. SWAYZE, M.D.,
Of Philadelphia.

The disease known by the title of this paper is a condition of the sexual organs in which occur unsolicited or involuntary emissions of the seminal fluids. When these discharges occur at night, as an accompaniment or result, for instance, of lascivious dreams, they are termed nocturnal emissions; when they occur during the day, either from incidental amative emotion, or from voluntary muscular effort, as in the evacuation of the bladder, or straining at stool, they are denominated diurnal emissions. In serious, confirmed cases of this disordered state, there are usually both diurnal and nocturnal losses. As the seminal secretions consist largely of the most vital elements of the blood, their excessive and protracted loss, whether voluntarily or involuntarily produced, can but prove injurious in its effects, and, sooner or later, undermine the physical and mental stamina of the victim.

The circumstance that the pathology of spermatorrhœa receives very limited attention, and the disease is so seldom treated by a large proportion of general practitioners, added to the generally-admitted fact that the complaint is peculiarly and specially difficult to manage, afford reasons to believe that this serious and prevalent disorder is entitled to far more professional consideration than it receives. The mysterious sympathy and interest woman almost universally inspires in the cultivated medical practitioner secure to her his earnest and patient study of the nature and means of relief of all the diseases of her sexual system, while the equally unfortunate sufferer of the male sex is comparatively neglected in this frequently distressing complaint.

The testicles, vasa deferentia, seminal vesicles and ducts, and prostate gland, are the special organs concerned in the production of the spermatic fluids, and each contributes towards the whole its proportion of individual secretion. The fecundating portion of the semen, containing the spermatozoa, is produced in the tubuli of the testes, and constitutes less than one-fourth of the entire spermatic secretion, as it appears at the time of its discharge from the urethra. Nearly two-thirds of the seminal fluid is the secretion of the vesiculæ seminales; while the prostatic secretion is nearly equal to the testicular. The proportions may be greatly varied by conditions of irritation in the different structures. While want of space here prevents a consideration of the characteristic differences and offices of the component parts of the mass of the semen, it is important that attention be directed to the circumstance that different portions of it are produced by different organs, one or more, or even all of which become disordered in spermatorrhœa, and should respectively receive attention in the treatment of this usually complicated disease.

After the age of puberty in man, the secretion of semen, and, from a plethoric condition of the seminal vesicles, its occasional loss, is a natural condition, consistent with the estate of healthy manhood. If there be no indulgence in sexual pleasure, the seminal vesicles may become suf-

ficiently engorged by gradual accumulation to induce the mental reaction of an erotic dream during sleep, resulting in an emission of semen. As a rule, no injurious effects could result from the occurrence of this event once or twice a month, unless the individual sustained injury through the operations of his imagination. The danger of this would be greatly increased if he should happen to read any of the catchpenny publications of advertising quacks, who, for pecuniary profit, paint pictures of horror with which to alarm every youth and man that may be, or suspects he may be, the subject of seminal emissions. In a healthy state of constitution, if the desire be genuinely urgent, and the act prudently infrequent, the effects of congenial coition are believed to be beneficial; there is increased disposition to physical and mental activity, the spirits are exhilarated, the moral atmosphere is cleared from the contamination of erotic visions. So, also, an occasional involuntary emission, the result of simple repletion, though far less salutary than natural association hallowed by love, may tend to prevent a plethoric condition of the system, diminish salacious occupation of the imagination, and promote a vigorous, elastic tone of both mind and body. But if these discharges, though infrequent, and not the result of any diseased condition, produce in the mind of the individual morbid apprehensions, convictions that he is the victim of a miserable complaint which will impair the integrity of his nervous system, ruin his health, and destroy his virility, they become, through the operation of his imagination, prolifically pernicious in their effects, inasmuch as they poison the mind, degrade the self-esteem, depress the spirits, unhappify the life. Marriage is the most rational, as well as the most speedy cure in such cases; for, in reality, no disease exists, except in the mind, and the results of proper conjugal association will prevent the manifestation of involuntary emissions from mere repletion, thus relieving the mind from the injurious effects of their annoying appearances.

By sympathetic excitement, or by extension of irritation from the diseased seminal vesicles, the prostate gland may become the seat of exalted activity, resulting in augmented secretion of prostatic fluid, which, appearing at the urethral meatus, after the mind has been engaged, from any cause, in amorous contemplation, or after an ungratified erection, or during the act of moderate straining, often causes the individual affected to fear he is a subject of spermatorrhœa, and in a fair way to reap the pictured terrors of multiplied evils. Persons who particularly observe these comparatively harmless appearances, and, on account of them, become depressed and melancholy, are specially fitted to be victimized by the chicanery of the charlatan, and often expend large sums for the cure of imaginary disease.

A disordered condition of the prostate gland, appropriately denominated by Prof. Gross, "Prostatorrhœa," is a usual accompaniment of spermatorrhœa, if, indeed, considering the intimate relation of the prostate to the other organs concerned in the production of the seminal fluids, it is not a constituent of the latter disease. Frequent discharges of prostatic fluid alone, though essentially less injurious than when accompanied by spermatozoa from the testes, may, nevertheless, by occasioning undue mental anxiety, interfere with the happiness and impair the health of the individual. Under the apprehension that the discharge is truly seminal in character, and a source of degradation, the man suffers in disproportion to the gravity of his complaint. A cure in such cases must be largely accomplished through the medium of the patient's mind; for unless a decided change in his mental impressions be effected, general treatment and local remedies will afford but limited relief.

The relations existing between the cerebellum and the testicles are intimate and reciprocal. The activity of the testicular secretions depends upon the brain and nervous system. Hence, in sexual abuses and spermatorrhœa, not only the seminal organs, but the brain also, becomes the seat of disordered condition. The cerebral complication is indicated by dizziness, heavy or compressed sensations in the cerebellum, confusion of ideas, impaired memory, loss of will-power, involuntary reveling of the imagination in erotic and voluptuous abstractions, perversion of thought from the higher to the baser channels of contemplation, incapacity to sustain assiduous application of either mind or body, moroseness, despondency, melancholia, chorea, epilepsy, dementia, insanity. One or more of these cerebral symptoms will be prominent in nearly every case of spermatorrhœa.

But while it is true that testicular secretion is directly influenced by the brain, and that the secretions of the vas deferens, seminal vesicles,

prostate gland, etc., are accessory products, and rapidly augment under the stimulation of pleasurable sensation and testicular activity, it is also true that any excitement or irritation of these organs react upon the brain; that the relations and functions of brain, spinal cord, and sexual organs are co-ordinate; and hence, the tendency of spermatorrhœa is to perpetuate itself, because all the effects of the disease constantly favor an aggravation of the causes of the disease. It is a physical, a mental, and a moral disorder combined. Consideration of this fact must be ever kept in view in its treatment.

The mental aspects of the subject are of paramount importance. In this connection the words of Maudsley, ("Body and Mind,") apply with pertinence. He says "Perhaps we do not, as physicians, consider sufficiently the influence of mental states in the production of disease, and their importance as symptoms, or take all the advantage which we might take of them in our efforts to cure it." Again, this author says: "Assuredly the most successful physician is he who, inspiring the greatest confidence in his remedies, strengthens and exalts the imagination of his patient." In the whole catalogue of diseases there is probably none that will so injuriously prey upon the mind of man as a disorder of his sexual system; and there is none for the relief of which the physician so much needs the co-operation of proper mental impressions on the part of the patient.

If, without special provocation, unsolicited emissions of semen occur oftener than once or twice a month, it is pretty conclusive evidence they result from some abnormal condition. The causes of spermatorrhœa are numerous. For convenience, I will simply denominate them lesser and greater. Among the lesser causes may be mentioned hereditary and congenital predisposition, cerebellar influences, exalted sensibility, depressed health, muscular relaxation, cystic irritation, constipation, ascarides, certain cutaneous eruptions. But the great, predominating causes of spermatorrhœa are masturbation and excessive sexual intercourse.

In certain sanguineo-nervous, excitable temperaments, with full developments of the posterior brain, there exists a powerful constitutional propensity to sexual excitements. There is in these persons a manifestly inherent disposition of mind to dwell upon erotic ideas, to find agreeable excitement in the perusal of works of passion and sensuality; there is, also, an inordinate and disturbing susceptibility to the natural fascinations, and a yearning for the associations of woman. A natural consequence of this constitutional condition is an exalted activity of the sexual organs, with a corresponding increase of involuntary emissions from repletion, unless they are prevented by sexual gratification in either a natural or unnatural manner. These emissions, through continued excitement, by the establishment of *habitual* evacuation of the seminal vesicles, and the dilatation or relaxation of their ducts, may result in confirmed spermatorrhœa. Persons in whom the orifices of the ejaculatory ducts are congenitally large, and those in whom the muscular tissue is naturally soft and yielding, are prone to seminal losses. Cystic irritation, especially at the neck of the bladder, by both continuity of surface and reflected excitement, may readily increase seminal secretion and involuntary emissions. In constipation, the rectum is usually in a distended, congested, irritated, abnormal condition, which, through proximity to the seminal vesicles, induces in them and their associate organs sympathetic excitement and involuntary seminal losses. The annoying irritation caused by ascarides in the rectum may, in a somewhat similar manner, produce similar results. Itchy cutaneous eruptions, like prurigo, when located upon the genital organs, may occasion seminal emissions, through sympathetic excitement of the seminal organs. Irritation of the prepuce and glans penis, from uncleanly accumulations caused by phimosis, may also induce seminal discharges. In self abuse and excessive venery, the congestions induced in the seminal organs cause an irritated condition of one or more of them, and, by the continuance of the provocation, this condition advances to an established, chronic state. Under the existing conditions of exalted sensibility, the susceptibility of the amative passion is abnormally increased, and, goading the sexual desires of the devotee of pleasure to a corresponding extent, he seeks relief in yet more immoderate gratification, by either a natural or unnatural mode, according to the peculiar proclivity and facilities in the case. The exorbitant tension of the nervous system under the excessive orgasms, and the exhausting discharges of seminal secretions, result in a depression and relaxation of the nervous and

muscular systems. Amid this generally impaired condition a loss of muscular tone in the ejaculatory ducts becomes an almost certain concomitant, and while the abnormally exalted sensibility enhances the secretion of spermatic fluids and the consequent filling of the seminal vesicles, the weakened state of the ducts offers diminished resistance to their evacuation. From this condition it is but a step to that of subacute chronic inflammation of the seminal organs, wherein the patient is annoyed by a peculiar soreness of the affected parts. This soreness, however, usually, neither diminishes his abnormal susceptibility to amorous desires, nor causes him to avoid the excesses that have induced it.

In some instances, so far as the patient's observations have extended, the engorged, inflammatory condition appears never to have transpired; but a gradual loss of pleasurable sensation, and even of the power of erection, evince the fact that overtasked and wearied nature has been forced into functional bankruptcy, so far as this masculine attribute is concerned. In these cases, the seminal fluids are thin and impoverished, the nocturnal emissions insensibly occur, the diurnal losses almost unconsciously dribble away when at the water-closet, and sexual desire is frequently so enfeebled that erections are either impossible or so transient that coition is impracticable. He is impotent.

A specific form of treatment, however excellent in itself, cannot be equally well adapted to the relief of all cases of spermatorrhœa. The primary causes, the sustaining causes, the conditions of the general system, all the influences that relate to the disease, should have consideration in its management. It is not the purpose of this paper to recount the treatment of the authorities, but to confine the hints herein given to the limits of the professional observations of the writer.

It should be borne in mind at the outset that a total suppression of the functions of the seminal organs must not be expected. In the state of marriage, whenever a certain distention from accumulation attains, causing desire, gratification is sought, resulting in consequent evacuation of semen. Under these circumstances, the seminal vesicles are habitually emptied, instead of being educated to retain under the provocation of distention. Hence, when from any cause such individual becomes deprived of the accustomed gratification, symptoms of spermatorrhœa may be expected to appear, even though there be no disease whatever of the seminal organs. In the unmarried, where, from causes more or less apparent, there has long existed an habitual activity of the seminal organs, it will be quite impossible to entirely prevent seminal discharges. Again, while the testicles and seminal vesicles retain their functional integrity, although all the causes of spermatorrhœa be removed, all improper habits abandoned, and all diseased condition relieved, it should not be expected that the natural, habitual secretory action will be entirely suppressed, and that no seminal discharge will in any manner appear. It therefore becomes necessary to endeavor to relieve the patient's mind from all morbid anxiety in reference to the emissions; to impress upon him that beyond the frequency and circumstances of them, and properly attending to all instructions for their relief, they are to find no place in his thoughts; to teach him to discipline his mind to follow pure and healthy channels; to inspire him with cheerfulness and confidence; to enable him to realize that he may become master of the erotic passion, instead of the passion being master of him.

Carpenter, in his "Physiology," truly says, "the sexual secretions are thoroughly influenced by the condition of the mind." Though this observation was made in reference to effects resulting from the mind being strongly directed towards objects of passion, I believe a similar effect may result from the habitual contemplation of disordered seminal manifestations; hence, for the relief of spermatorrhœa, occupation of the patient's mind in a direction entirely opposite to that of the disordered condition is specially beneficial.

In a mild form of the disease, the emissions being rather infrequent, and no particular tenderness of the seminal organs, but the brain and mind somewhat unduly involved, congenial marriage promises very satisfactory results. In such cases, moderate gratification in the connubial relation prevents plethora in the seminal vessels and involuntary emissions, relieves and balances the brain and nervous system, and cools the imagination, while the welfare and happiness of wife and family afford objective interests of salubrious character. But it should be impressed upon the mind of the patient that while a moderate indulgence in the privileges of the conjugal relation may operate as a com-

plete corrective, an abuse of those privileges must inevitably aggravate his infirmity.

In all cases requiring medical interference, an examination of the testicles and vas deferens should be made, in order to ascertain if there be any special tenderness of these parts. A careful exploration of the entire urethral canal should then be gently made, for the purpose of learning what degree of sensibility may exist in any part of the same. For this purpose, a moderately flexible, well-oiled bougie is the proper implement. Sometimes the entire urethra will be found so painfully tender that a complete examination will be with difficulty obtained. In other cases, there will be a peculiar absence of sensibility. In the majority of instances, however, the membranous urethra will be found acutely tender, especially in the region of the orifices of the ejaculatory ducts and the prostate. This condition may also extend into the neck of the bladder. On withdrawing the bougie, there will sometimes be found upon it, near its extremity, a shred of inspissated mucus, tinged with blood. This appearance indicates the existence of a highly inflamed, or abraded spot in some part of the membranous urethra.

The next step is the introduction of local applications. For this purpose solutions of the sulphate of zinc have been the most satisfactory in my hands. I have also found advantage from the use of nitrate of silver, sulphate of copper, and tannin and glycerine; but feel less confidence in their results. Of the use of the solid nitrate, so much lauded by Lallemand, I have had no experience; but believe its indications extremely rare, its utility doubtful. The "antiphlogistic touch" of solid nitrate upon the inflamed surface of the membranous urethra, a structure specially important in its relations to the bladder, seminal ducts and prostate gland, and altogether invisible to the eye of the operator, is a problematical proposition, at best.

I employ the zinc in solutions of varying degrees of strength, from one grain to four grains to the fluid ounce of water, using the weaker when the sensitiveness of the urethra is acute, and the stronger when there is absence of sensitiveness. In the former condition the seminal losses are undoubtedly aggravated by the excess of sensation; in the latter, by relaxation and atony; in the former condition the object of the application is to cool, soothe, reduce inflammatory action; in the latter, to stimulate and tone the relaxed atonic structures. Having made a solution of the strength desired, I charge a Mattson's elastic syringe with the same; then introduce a gum catheter of medium size to the membranous urethra, pausing at the point of greatest tenderness; a small tube of the syringe is then firmly inserted into the free end of the catheter, and the wash slowly, gently introduced. If the irritation has invaded the neck of the bladder, the catheter may be advanced to that location during the introduction of the application. The bladder should not be entirely empty at the time of making the injection, so that, should any of the solution escape into that organ, its action will be immediately annulled by mixing with the urine. The undersize of the catheter used favors the free escape of the solution upon its outside. As there generally exists a hypersensitive state of the entire urethra, and the solution having lost some of its strength by coming first in contact with the parts most diseased, benefit results from the washing of the remaining portion of the urethra by the escaping fluid. A fully charged syringeful of the wash is usually sufficient for one application. After removing the catheter, the patient should be enjoined to refrain, for a couple hours, from urinating, if possible. The application should not be repeated oftener than once in three to six days.

If the testes and vas deferens are tender, moderate counter-irritation may be maintained upon the scrotum and perineum, by occasional application of a little dilute tincture of iodine. The testicles should also be supported with a linen or silk thread suspensory.

The rectum next requires attention. If the habit be constipated, or if there is rectal irritation, from ascarides, they must be promptly destroyed, and the rectum habitually kept free from fecal accumulations. This end may be attained by the use of injections of cool water, either alone, or with salt, or soap. It cannot be too strongly impressed upon the mind of the patient, that his cure will be greatly facilitated by the use of frequent injections of cool (not *cold*) water into the rectum. The sense of relief and comfort experienced after the evacuation of the injection will be ample reward for the trouble of its use.

Strict cleanliness of the external genital organs, especially of the prepuce and glans penis, must always be observed. By attention to this precaution, local heat and irritation, and

consequent tendency to sexual excitement, will be obviated.

General bathing is of great importance. For the relief of the local congestion and irritation of the seminal organs, the pores of the entire cutaneous investment of the body must be kept free from accumulations, and a good surface circulation must be maintained. It is a mistake to order *cold* baths in spermatorrhœa. There should be no repelling of the circulation from the surface, nor chilling of the body from any cause. The baths should be warm. But the patient should not remain in the bath longer than ten or fifteen minutes, a time just sufficient for the purposes of ablution. By the use of warm water he secures a more rapid and thorough cleansing of the skin, obtains the soothing effects of the water, encounters no difficulty in maintaining brisk surface circulation, and leaves the bath before the supervention of any relaxation of the system.

To facilitate his cure, it is necessary that the patient attends to frequent evacuations of his bladder. The sympathetic excitement of the seminal organs from cystic irritation is well known; and I always insist that the patient should prevent distention of the bladder by accumulation of urine, that he should urinate just before retiring, and rise in the night for the same purpose, if there be the slightest desire experienced, or if there be erections. Neglect of this often results in a nocturnal emission.

The patient should sleep upon a mattrass, lie upon his side, and be always very comfortably but not too warmly covered with bed clothes. He should not retire until he is right well fatigued, in a favorable condition to go promptly to sleep, and to rest soundly. He should rise early and promptly, and never indulge in broken morning slumbers, that are prone to result in dreams, sexual desires, and emissions. The use of alcoholic stimulants, particularly the brewed beverages, should not be indulged. Their tendency is to excite the circulation, increase the secretion of urine, promote sexual desire. I have known the use of ale and lager to greatly aggravate the complaint. This probably resulted from their producing very marked increase of the urates in the urine, and deposits of sand in the bladder, which caused irritation of the neck of the bladder and of the urethra. In the evacuation of the bladder, particularly near the close of the act, the particles of sand lodge along the course of the urethral canal, especially in the region of the prostate, and sometimes cause severe local irritation and discharges of seminal fluid.

If the patient use tobacco in any manner to excess, it will be necessary for him to curtail his indulgence in this respect. The abuse of the tobacco habit often promotes spermatorrhœa.

If masturbation be practiced, the habit must be promptly abandoned. In many instances, this will be difficult to accomplish; but a firm determination, aided by local treatment and appropriate internal remedies, will usually succeed. If excessive promiscuous intercourse has been indulged, the error must be understood by the patient and corrected. Most patients require enlightenment in reference to what constitutes excess. Usually, if the emissions be not frequent, and there be no marked local irritation, coitus once in six or ten days will, for reasons already stated, prove beneficial rather than otherwise. If the patient be married, the case will be difficult to manage, for he will be constantly disposed to unduly excite the disordered organs. In a communication on this subject, received from a western medical gentleman several years ago, he tersely affirms "This is an unfortunate class of patients. They will not resist the temptation an opportunity affords. The more frequent connection the greater the desire. It creates an irritation and sense of heat and fullness about the seminal ducts that connection only relieves, and that for a short time." This gentleman advocated the cimicifuga for the relief of irritation and restoring of lost nervous power; but I regret to say my experience in the use of the article was unsatisfactory. I recommend married patients to occupy a separate bed and bedroom; very considerable cause of desire, and temptation to frequency, will thus be obviated.

If there be phimosis, and irritating accumulations under the prepuce, circumcision may be necessary. Sometimes there exists a hypersensitive condition of the glans penis and prepuce, that provokes desire and repetition of coitus. This undesirable condition may be modified by an occasional immersion of the parts in a solution of lead, zinc, or alum, and by habitually keeping the prepuce in a retracted position. Circumcision has been proposed as a preventive of the evils of self-abuse and venereal diseases. The supposed exemption of the Jews from these misfortunes has been cited in support of universal circumcision. While any condition

that diminishes the disposition to masturbation would, per consequence, diminish the evils of spermatorrhœa, it does not conclusively appear that the habit of self-abuse is proportionally less general among individuals of Jewish descent than among the uncircumcised. To obtain reliable data upon which such a fact may be established, is impracticable; and that the circumcised, as a class, are less salaciously inclined than other people, is extremely doubtful. Except where phimosis exists, there are very few cases where circumcision should be employed as a remedial measure in spermatorrhœa. All the special advantages claimed for the circumcised state may be readily obtained by having the foreskin kept in a retracted position so long as there is occasion for so doing. In normal conditions great advantage is derived from the office the foreskin performs as a covering and protection from irritation and excitement of the sensitive glans.

Internal remedies constitute an important part of the treatment. The tranquillizing effects of anaphrodisiacs are indicated in nearly all cases. For this purpose I employ bromide of potassium, fluid extract of hamamelis, lupulin, camphor, and hyoscyamus. As a sedative to both the brain and the seminal organs the bromide of potassium is admirably adapted. If there be anemia, relaxation, and exhaustion, ferruginous tonics should be administered. My own preferences are the ammonio-ferric-alum, and the pyrophosphate of iron. The iron-alum combined with fluid extract of ergot, I employ as an astringent tonic when there is relaxation, and excessive secretion and loss of semen. In loss of sensibility and power of erection, iron, quinia, strychnia, and galvanism are, perhaps, our best remedies. In this condition, if the patient be married, I advise separate beds, and abstinence from all attempts at coition oftener than once or twice a month. The temporary separation of a journey or a visit from home, by either husband or wife, for a month or two at a time, is frequently attended with excellent results. If the case be serious, characterized by considerable local irritation, nervous and physical prostration, and frequent emissions, marriage should not be advised as a remedial measure. The results would probably prove disastrous, and an early consumption, softening of the brain, or Bright's disease of the kidneys hasten the devastation of death. The irritation should be subdued, the frequency of the emissions arrested, and the vital powers recuperated before marriage can prove beneficial. If there be complete loss of pleasurable sensation and of the power of erection, of course the individual is impotent, and wholly unfitted for the connubial relation. But even the gravest and apparently most hopeless cases of spermatorrhœa are deserving our earnest consideration, and may be greatly relieved, if not entirely cured, by a faithful and persevering employment of all the means that may be applied for the alleviation of this unfortunate class of sufferers.

SIMPLE FRACTURE OF THE FEMUR. ILLUSTRATED BY A CASE OF RE-FRACTURE.

BY A. G. WALTER, M. D.,
Of Pittsburg, Pa.

There is no department in the vast domain of Surgery more calculated to influence the reputation of the surgeon than that which embraces the management of surgical injuries—especially fractures and dislocations of the limbs. And there is none which concerns the future comfort and usefulness of the patient as much as that of the science and art of *bone-setting*, as it is popularly named. On account of the frequency of traumatic lesions, outnumbering, as they do, all other surgical cases, the study of this subject requires more than ordinary consideration at the hand of the surgeon, in order that limbs may be restored to as near the natural shape and usefulness as possible; and, moreover, that vexatious law-suits for malpractice, so common in this country, while hardly heard of on the continent of Europe, be avoided.

The surgeon attending injuries of this character in this country is considered by the public in general as a mere mechanic, a medical carpenter, bound to restore the injured limb to as normal and useful a status as it enjoyed before the injury. And if it should so happen that he has failed, from causes beyond his control—such as the nature and severity of the injury, and others—to restore the limb to its pristine condition, perpetual blame will not only rest upon him, but often a suit for malpractice will be instituted against him.

Having been largely engaged in this branch of surgery for nearly forty years, in a large manufacturing district, where traumatic injuries of every variety are of very frequent occurrence,

I have felt compelled, by necessity as well as a sense of duty, to devote the closest attention to the management of these cases. And if on that account I claim to have been more successful in my endeavors to afford prompt and efficient relief than many of my confréres, I hope the charge of vain arrogation will not be laid against me, nor need I apprehend that the injunctions candidly and truthfully promulgated in this paper and the succeeding ones, will fail to be appreciated.

I intend to follow up this article treating of fracture of the femur, by a detail of my experience in the management of fractures of the other bones of the body, and hope thus to serve the less experienced and junior members of the profession, and enable them to treat such cases with satisfaction to themselves and their patients.

No class of injuries is of more frequent occurrence than simple fracture; none requires so exclusively, for its treatment, the exhibition and application of common sense principles, and yet none other is so frequently followed by disastrous results—deformities, shortening, non-union, and the annoyance to patient and attendant resulting therefrom. The natural inference that injuries of such frequent occurrence are followed by correspondingly frequent satisfactory results fails here, for the converse is true, and in my opinion, the treatment of fractures has been the occasion of more reproach to surgeons than that of all other injuries united.

It is more difficult to convince the popular mind of the unavoidable nature of imperfect results after these injuries than after any other, with the single exception, it may be, of dislocations. And the cause of this is evident. The frequent occurrence of fractures, and the usually satisfactory termination of their treatment, have resulted in the education of the public to the belief that these injuries are readily remedied, and in consequence, an imperfect result is popularly attributed either to the neglect or ignorance of the surgeon.

The causes of imperfect results, when not dependent upon a constitutional vice, the severity of the injury, or a neglect upon the part of the patient to follow the directions of the surgeon, are: failure to *properly* coaptate the extremities of the fragments; failure to maintain *perfect* coaptation by *proper* splints, appliances and bandages; and *a too early discontinuance* of treatment. And it is upon these latter causes, as coming more particularly within the province of the surgeon, I wish to dwell. While these remarks apply in general to fractures of all of the bones of the body, they do so with more force to those of the femur; for with regard to the results of treatment after fracture of this bone, the standard of excellence adopted by the profession is not as elevated as it should be; and in consequence, we observe, sufficiently often, cases exhibiting but too plainly the result of aiming at too low a degree of perfection. In the following history of a case, which I have selected not only on account of its being illustrative of the advantages to be derived from refracture, on account of apparently irremediable deformity, but because of the situation of the fracture, at a point where we constantly are met with the projection forward of the superior fragment, a difficulty from which has emanated the invention of innumerable expedients and appliances for its control, I propose giving my views upon simple fracture of the femur, what we are to expect from treatment, and what method of treatment I have found most available for satisfactorily fulfilling those expectations.

Case of Badly United Fracture of the Femur.

Edward H., a native of Ireland, aged thirty-two years, residing at Greenfield, Pa., was a strong, healthy and muscular man, of temperate habits and in the prime of life. On February 21, 1874, while engaged in his occupation as a coal miner, he was struck by some falling slate, which felled him to the earth, and rendered him insensible, in which condition he remained for several days. In addition to injuries about the head and back, he sustained a simple oblique fracture of the shaft of the right femur, below the trochanter. Two physicians were called in, but unfortunately they failed to locate the seat of fracture, and supposed it to be situated in the lower third of the bone. The treatment they pursued consisted in the application of plaster of Paris to the lower third of the thigh, and of extension by means of a pulley and four-pound weight attached to the leg by adhesive strips. After six weeks the use of the plaster and weight were discontinued, a starched bandage was substituted, and the patient was kept in bed for three weeks longer, when he was allowed the use of crutches. Three and one-half months after the injury the patient, owing to the deformity and

shortening of the limb, of its uselessness, and of his consequent inability to dispense with crutches, consulted me, when, upon examination, I discovered the following condition: The limb was about three and one-half inches shorter than its fellow, and there was great deformity of the thigh, the upper part of the femur being greatly curved outward. The fracture was situated in the upper third of the thigh, just below the trochanter major. The fragments were firmly united together, but they greatly overlapped each other, the upper one pointing forward while the lower one pointed behind the former and outward. The bulk of the bone at the point of union was immense, the diameter of the mass being four and three-fourths inches. There was semi-rotation outward of the knee and leg, and eversion of the toes.

Having decided, with the consent of the patient, to attempt the refracture of the bone, on June 5th, 1874, he was chloroformed, when I pursued the following plan: The foot and leg were bandaged with a flannel roller; a broad leather belt was fastened around the lower part of the limb just above the malleoli, and extension was made by traction upon straps attached to it. A strong perineal band was then applied, the ends of which were given in charge to an assistant, with instructions to make counter-extension. After the expenditure of a great deal of force by traction upon the extending and counter-extending bands, and by forcibly bending the femur outward at the seat of fracture, the bone was refractured, the snaps of the yielding osseous tissue being distinctly heard. After repeatedly moving the fragments upon each other they were found to separate completely, but owing to the contraction of the muscular tissue some difficulty was experienced in attaining the desired degree of extension. This contraction was finally overcome, the limb was drawn out to the desired length, and I then dressed it in the following manner:—Long hose-leather splints, braced by sheet-iron ones, were applied along the whole length of the anterior, lateral and posterior faces of the limb, and were secured by rollers, a firm compress having previously been secured by adhesive strips over the extremity of the upper fragment, to prevent its bulging forward. A long external extending splint, which I have always used in the treatment of fractures of the femur, reaching from above the crest of the ilium to the sole of the foot, with foot-board attached, was then applied along the outer face of the limb, extension being made by tapes secured to the sides of the leg and fastened beneath the foot-board, and counter-extension by means of a perineal band, the ends of which were fastened to either extremity of a movable arm at the upper end of the splint. Roller bandages were then applied over the whole, completing the dressing. The patient recovered readily from the anæsthetic, when he was given a hypodermic injection of morphiæ sulph., gr. ¼, and was then removed to his bed.

The following selections from my memoranda indicate the progress of the case:—

11 o'clock, P. M.—The patient has vomited several times, and his pulse is indicative of fever, but he makes no complaint of his limb.

June 6th, 8 A. M.—He slept two hours and dozed a good deal. He felt sick at the stomach, but has not vomited again. The pulse is 96 per minute; the skin is warm; the tongue dry, and he has thirst. No pain in the limb is complained of.

℞. Tinct. digitalis gtt.x.
Sig.—Every two hours.

June 7th.—He dozed a good deal. The pulse is 92, temperature normal, tongue dry and coated, and he is thirsty. He urinated. He does not complain of pain.

June 8th.—He did not sleep much, but dozed a good deal, and feels rested. The pulse is 76, temperature normal, and tongue moist but coated. He has no appetite. He has no pain.

June 9th.—He slept pretty well. The pulse is 84, temperature normal, and tongue moist, cleaning. He has no pain.

June 10th.—He slept well; pulse 76, temperature normal, and tongue moist and cleaning. He feels comfortable.

June 11th.—The pulse is 76; the functions are normal and appetite is returning. The limb was entirely redressed, when the contour of the femur appeared natural and the limb of the normal length. There was scarcely any sign of contusion about the thigh, in comparison with what was expected from the violent manipulations during the refracture of the bone.

June 20th.—The patient has continued comfortable, and all of the functions are normal. The limb was again entirely redressed, and found of the natural contour and length. The fractured extremities cannot be felt, so close is the approximation of the fragments.

June 29th.—From the 23d to the 28th of June he was afflicted with pleurisy, but made no complaint of the limb. The limb was again redressed and found to be normal in shape and length. The seat of fracture can only be discovered by localized pain. There is still mobility of the fragments.

July 15th.—The patient dressed himself and walked down two flights of stairs on crutches. The limb was redressed and found to be of the normal length, but bony union has not taken place yet. The patient is permitted to walk on crutches, carrying the limb in a sling.

July 24th.—The limb was redressed and found of the normal length. Union at the seat of fracture is found somewhat firmer. The extremity of the upper fragment is somewhat prominent along the anterior and external faces of the limb.

August 25th.—The limb was redressed, the skin being found greatly chafed. The skin was inuncted with lard and covered with paper, after which the splints and bandages were applied. The use of the extension splint has been discontinued, long volar and external, and short anterior and internal sheet-iron splints being now used. The limb is of the normal length and union of the fragments is solid, while the bulk of the bone at the seat of fracture does not differ materially from that of the corresponding point of the opposite limb. The patient walks about on crutches, but is not permitted to bear any weight upon the limb.

September 23d.—There is firm union at the seat of fracture, the outlines of the femur are normal, there is no deformity, and no shortening is apparent. This being the condition of the case, the dressings are removed and the following substituted: Four short, galvanized sheet-iron splints were made to accurately fit the anterior, posterior and lateral faces of the thigh, and were held together, and in position by three straps, which were passed through an eyelet or guard, on the exterior of each splint, and then buckled. To prevent any tendency of the splints to slip downward, a leather belt was passed around the waist, from which a strap extended and was fastened to a button at the upper extremity of the external splint.

This apparatus was applied in place of the former one, because as it was light, and occasioned but slight, if any discomfort, the patient would be in less haste to dispense with that degree of support necessary, for many months, for the preservation of the exact length of the limb, than he otherwise would.

He was directed to remove and readjust the splints daily, to present himself from time to time for inspection, and to continue using crutches, and refrain from walking upon the limb for several months, in order to prevent the shortening which a too early use of the limb would inevitably produce.

At the expiration of nine weeks the patient discontinued wearing the splints, without consultation with me, and on February 5th, 1875, eight months after I had refractured the bone, he presented himself for examination. The thigh was of the normal contour and there was no apparent shortening. There was some thickening about the seat of the fracture, apparently caused by effusion into and between the muscles. The patient stated that he still used crutches, but a few days later he was seen walking briskly, carrying a cane.

He was advised to continue the use of the splints, in order to prevent the occurrence of shortening or curvature of the bone, but he declined doing so.

Remarks.—Success in the above case, so prompt and decided, was not expected, owing to the difficulty of refracturing the femur so near to the body, where a proper purchase for steadying the upper fragment, during the manipulations necessary for the separation of the lower one from it, cannot be attained as well as at a point lower in the limb. Refracture, however, was effected, but it was at the expense of such a degree of force and perseverance as might appear, to those of the profession inexperienced in such manipulations, hardly justifiable. But if success is to be attained at all, in cases of this nature, a great deal of force must be applied, with determination and perseverance, but at the same time, of course, with caution and intelligence. The direction and degree of the force applied can only be determined by the judgment of the operator. And here I may remark that it is noteworthy, with what immunity the injured limb will bear the severe manipulation necessary for success. The small amount of swelling following in the train of refracture is remarkable; it is often much less than is observed at the time of the primary injury, and is always decidedly less than that following the reduction of old luxations. Refracture having been effected, the next step would be the proper dressing of the limb, with

the view of effecting and maintaining the proper length of the limb, and securing prompt consolidation of the fractured extremities, in their normal relations.

And in this connection I shall venture the assertion, opposed as it is to the opinions of surgical writers of eminence, that all ordinary simple fractures of the femur should unite *without shortening*. If an experience of forty years in a community subject to surgical injuries be a criterion, fractures of the thigh bone in general, wherever located, can and will unite *without* shortening, if but *proper care, appliances* and *diligence* be used during the treatment of the case. Proper coaptation and extension, with continuance of the same, are the only desiderata requisite. But to obtain these ends, the surgeon must possess a sufficient degree of mechanical ingenuity, and be able to accommodate his appliances to the particular injury. The proper coaptation of the fragments of a broken bone requires as much care, as accurate an eye, as fine touch, and as great manual dexterity, as the most delicate operation in surgery. The degree of extension is no less important than the accuracy of coaptation, inasmuch as the latter depends upon the former. And here is an item that must be taken into consideration by the surgeon if he would obtain union without shortening. The powerful muscles of the thigh, irritated by the jagged extremities of the fragments, obstinately contract, and much of the force used in extension is expended upon the hip, knee and ankle joints, thereby, placeing them abnormally upon the stretch. The condition of the two limbs is in this respect different, for the uninjured member can be fully extended, without the expenditure of any force, and consequently without the stretching of the articulations. The surgeon, therefore, must not content himself with a sufficient degree of extension merely to obtain apparent exactitude in the length of the two limbs, but must be careful that the injured member *exceed in length* the uninjured one, and in order to avoid all possibility of error in this regard, should make his measurement from the anterior superior spinous process of the ilium to the external malleolus. Convinced as I am of the correctness of this assumption, I have for a long time acted upon it, and have invariably increased the relative length of the uninjured limb, and have maintained this degree of extension, until the occurrence of union of the fragments. I have never been satisfied in the management of cases of this character, but by securing *increased length* of the limb, and the result has been that as soon as the joints resumed their functions and returned to their pristine condition the member became of the same length as its fellow, shortening after fracture of the femur being evidently no more of a necessity than after fractures of any of the other bones of the body. Proper coaptation and extension having been effected, they are to be *maintained*, and for the accomplishment of this purpose, I have found no appliances superior to those described in the history of the foregoing case.

And then as regards the dressings, they should be frequent. For the first few weeks, or until pretty firm union is established, the seat of fracture should be carefully examined, and the limb accurately measured, at least once a week. This will enable the surgeon to rectify any inaccuracy of coaptation.

Union without shortening is also without deformity, for when perfect coaptation has been effected, no more callus is thrown out than is sufficient to unite the fragments together, and I generally find it a difficult task, at the expiration of eight or ten weeks after the accident, to discover the seat of fracture.

When the bone has united firmly, and the patient is allowed the use of his limb, the case should not be permitted to pass from the care of the attendant. Splints, such as I have described, should be fitted to the limb and secured by straps, thus requiring but little labor in their application, and no discomfort, and the patient should be directed to continue wearing them for many months, in order to avoid all possibility of the bone bending upward, a condition that is liable to occur unless guarded against in the manner described.

To sum up, then, I insist that union without deformity or shortening will occur whenever the following conditions are adhered to:—

1st.—The obtaining of accurate coaptation of the extremities of the fragments.

2d.—The obtaining of a sufficient degree of extension to maintain accurate coaptation, and this is always evidenced by an increase in the relative length of the limb.

3d.—The maintenance of the above conditions by proper splints, appliances and bandages.

4th.—Frequent renewals of the dressings; and,

5th.—Support to the limb, for an indefinite period after union of the fragments has occurred, by splints, to prevent any tendency of the bone to bend outward at the seat of fracture.

EDITORIAL DEPARTMENT.

PERISCOPE.

Transplantation of Bone.

A novel description of transplantation is mentioned as having been described by Nussbaum, at a surgical conference held at Munich, in which he discussed certain forms of mal-union after fractures, with special reference to what is known as pseudarthrosis, and the treatment applicable under such conditions. If, after the loss of a considerable quantity of bone, the fragments are widely separated, and possess only a ligamentous union, he suggests that a piece of bone should be transplanted from one of the fragments to supply the deficiency, and he has accomplished this in one case with a successful result. This was in an officer who had sustained an extensively comminuted fracture of the ulna from a gunshot injury, which, after necrosis, and separation of the small pieces, had healed, leaving a false joint with the ends of the fragments two inches apart, and united only by a slender ligamentous band. Although the radius was unbroken, there was considerable unnatural mobility, and great impairment of the usefulness of the arm. In performing the operation the seat of fracture was first exposed, and then, after removing the intervening fibrous band, a piece of bone two inches long, and involving half the thickness of the ulna, was separated from the upper fragment by means of a saw and chisel, so that it was left adhering only to the tip by means of a narrow bridge of periosteum; it was then brought down so as to occupy the interval between the fragments, sutures were placed in the wound, and the limb was supported in a plaster-of-Paris splint with a window. All went on well after the operation; the wound closed in the course of a few weeks after the separation of a minute sequestrum, which only amounted to about one-tenth of the transplanted portion. "The piece of bone which had been transplanted had united, and could be distinctly felt," and, after a while, "the firmness of the now uninterrupted ulna was clearly established." After six months the use of the arm had so far returned that the patient was pronounced fit for service.

The Treatment of Necrosis.

Dr. A. H. Corley, F. R. C., S. I., in the *Medical Press and Circular*, gives the following advice on the management of necrosis:—

If there is one precept more than another on which surgical writers are unanimous, it is that no operative interference is justifiable until the sequestrum is completely detached, and there is no doubt that when such has taken place the cure is more satisfactory; but there are two conditions under which the precept is of little use as a guide. 1. There may be complete separation, and yet the sequestrum so fixed from the extension into its inequalities of granulations from the surrounding new bone, that there may be no evidence sufficient to show the detachment. 2. There may be present symptoms of wasting and hectic, so urgent that surgical interference of some kind may be rendered imperative, to save the patient's life. Besides, even though there may exist no very urgent constitutional symptoms, still we now thoroughly understand that long continued and profuse suppuration, especially from diseased bone, is extremely likely to produce that serious form of visceral degeneration called amyloid, a condition not amenable to treatment, and one which may tend to a fatal result, even when its cause had long since been removed. It is, therefore, very desirable to know if operative measures may be attempted before any certainty exists as to the complete separation, and also when a continuance of the symptoms indicates a probably fatal termination, even though the surgeon may have reason to think that detachment is only in progress. The following case illustrates my meaning and my treatment:—

T. L., an attorney's clerk, was admitted into Jervis Street Hospital, in the beginning of October, 1873, presenting the symptoms of tibial necrosis to a most exaggerated extent. The limb was nearly twice the size of the opposite one, and had seven or eight openings through which the dead bone could be felt, and which were constantly pouring out quantities of pus. The disease was of nearly a year's duration, and had, confessedly, a syphilitic origin. His general health was simply deplorable; want of appetite, night sweats, and diarrhœa, had brought on extreme emaciation, and attempts to use the leg in walking produced much pain and exacerbation of local symptoms. There was no evidence of motion in the sequestrum, but in some places the probe could be passed for a little distance between the new shell and the sequestrum. I kept him in bed for about six weeks, in the hope that rest and attention to general hygiene might raise his health to such a standard that he could afford to wait until Nature's effort should separate the sequestrum, and afford an evidence that the process was complete. Although the inflammatory condition of the limb was ameliorated, his general health did not improve, and the symptoms of exhaustion became so urgent that, in December, 1873, I determined to interfere, operating for necrosis first, and holding myself free to amputate if necessary. I used Esmarch's method, to obviate hemorrhage, and I am bound to say that I do not think the operation, or any one like it, could have been successful unless done

bloodlessly. When I mention that the patient was one hour and forty-eight minutes under chloroform, and exhibit the amount of bone removed, the gravity of the case can be readily understood. I found, as the size of the limb led me to expect, a very thick new shell, and on cutting away a portion of this between adjacent cloacæ with mallet and chisel, I found a sequestrum which included the entire diaphysis of the tibia. Along the surface complete separation had taken place, although in some points the dead and living tissues were in actual contact; but at the two ends no line of separation was to be found, for dead bone, fixed and firm, could be felt as far upward and downward as I thought it prudent to lay open the new shell. Partly with the forceps and partly with the chisel, I managed to get away the great mass of the sequestrum, but was obliged to leave a small portion at the upper and lower ends. Having packed the cavity well with lint, and bandaged over all, I sent the patient to bed. I may say that practically the operation, though I thought it at the time unsatisfactory, was a great success. Although in the second week he had a sharp attack of surgical fever, the great cavity filled up and cicatrized over most satisfactorily, except at the upper and lower ends, where small sinuses leading to undetached dead bone still exist. All the constitutional symptoms passed away. The patient is now in excellent health, and the remaining bone is gradually coming away in small fragments. I should mention that, shortly after he left the hospital, he thought himself so well that he walked a considerable distance and took too much exercise. The consequence was that a rapid and unhealthy kind of inflammation ran up from one of the lower sinuses through the cicatrix, and laid bare a small portion of the edge of the new bone; a superficial exfoliation of this took place; and rest in the horizontal position, with some iron lotion, restored matters to their previous condition. This patient can now walk to his work, do it, and is in excellent health.

Splints of Plaster of Paris and Hemp.

The London *Medical Record* quotes from Dr. Beely a notice of this new kind of splint, which, during the past twelve months, has been extensively used by Professor Schönborn, of Königsberg. The materials used in the composition of this splint are heckled hemp, the fibres of which must be arranged as parallel as possible, and gypsum powder, such as is used in the ordinary gypsum bandage. Bundles of the hemp, each of about the thickness of the little finger, and of a length corresponding to that of the part to be covered, are dipped in a mixture of gypsum and water, and then applied, side by side, over the surface of the limb, which surface should have been previously oiled or covered by flannel. These splints speedily become dry and form a hard casing, closely applied to the whole surface of the limb. They can be readily strengthened by the subsequent addition of other bundles of hemp, saturated in the same way by gypsum and water, and may be rendered waterproof by painting over their surface an alcoholic solution of shellac. When it is necessary to apply a splint of this kind to the posterior surface of the leg or thigh, and the patient cannot turn over so as to place this surface uppermost, the bundles of hemp, after mixture with gypsum, should be kept in contact with the limb by means of a flannel bandage. The advantages which this is alleged to possess over other fixed splints of different composition are its cheapness, the facility of its application, its durability, its porosity, and the rapidity with which it becomes dry and firm. Dr. Beely thinks that it would prove a very useful application when a patient suffering from fracture or gunshot wound has to be moved, and that gangrene would be less likely to occur than from the use of the ordinary gypsum splint. In Professor Schönborn's practice this form of splint has been applied in about fifty cases, and generally successfully.

Medical Uses of the Pawpaw.

The pawpaw, *carica papaya*, as found in tropical and subtropical America, is recommended in the London *Medical Record* by Dr. Evers, for various medical purposes. He says:

I have employed the milky juice of the unripe fruit in the treatment of splenic and hepatic enlargements, and with good results. I have treated sixty patients with this drug, and in thirty-nine instances a cure was effected; in eighteen cases the results were not reported; and in three cases (of enormously enlarged spleens) relief was afforded. The mode of administration is this. About a teaspoonful of the juice is collected and mixed thoroughly with an equal quantity of sugar; this mass is divided into three boluses; one to be taken morning, noon, and evening. For children, a single drop of the juice, mixed with sugar, is sufficient. The pulp of the unripe fruit (the rind being removed), "mashed" up with hot water, might be applied as a poultice over the enlarged gland. On this external application, however, I do not place much reliance. No ill effects result from the internal application of the drug. Some of the patients treated complained of a feeling of heat in the stomach, nothing more. When symptoms of gastric or intestinal irritation occur, I have found it necessary to combine opium or hyoscyamus with the juice. The drug appears to me to act as a tonic and deobstruent. My plan for ascertaining that there has been an actual diminution in the size of the enlarged gland, was to mark off with the nitrate of silver the limits of the affected organ when the patient applied for treatment; and after about a fortnight or month, percuss and mark off again in the same way. In very bad cases, I have seen a decrease of from half an

inch to an inch in perpendicular dullness. Patients have told me again and again that they felt considerably lighter in the side; and that their digestion was now good. I believe that the drug is most active in cases where the stage of ague-cake, *i.e.*, the genuine amyloid spleen, has not yet been attained—in fact, when the deposit in the gland is still albuminoid. It acts much more rapidly than the hydrochlorate of ammonia, the bromide of potassium, or the external application of the biniodide of mercury ointment. From twenty to twenty-five days is the longest time that a patient is generally kept under treatment. A nutritious and liberal diet is also an essential adjunct in these cases.

The External Use of Tincture of Iron.

In the *British Medical Journal*, Dr. A. C. Foster writes:—

In simple cutaneous erysipelas, and also in the milder phlegmonous variety, this agent possesses the decidedly specific effect of subduing, almost at once, the morbid action. I have applied it in numerous instances, and always with the most satisfactory results. So far as my experience goes, it is, in these cases, incomparably the best remedy ever used. It seldom happens that more than one painting of the same spot is required; and, having applied it, no other external agent whatever is needed. In scrofulous swellings of the neck its discutient properties are far superior to those of iodine; and where a puerperal breast or inguinal gland in the male has threatened to end in suppuration, the early use of the tincture, every other day or so, with a camel's hair brush, has been sufficient to effect resolution, while in similar cases we find frequently that leeches, poultices, and evaporating lotions fail to prevent the formation of matter. Again, the remedy may be applied most advantageously in acute rheumatism, where any particular joint is especially swollen and painful, and also to the inflamed surface surrounding an unhealthy ulcer, or along the course of the absorbents when irritated by a recent, ill-conditioned wound. The well-known remedy, ink, as a domestic application in ringworm, has long enjoyed a not altogether undeserved popularity, its curative effect being undoubtedly due to its ferruginous ingredient.

Reviews and Book Notices.

NOTES ON CURRENT MEDICAL LITERATURE.

——Prof. H. F. Campbell, of Augusta, Ga., calls attention, in a pamphlet on uterine displacements, to some new instruments in uterine surgery, and to the "genu-pectoral" position, which he believes facilitates manipulations. The publication may be had of the author.

——Dr. J. Ott, of Easton, Pa., has made a careful examination of the physiological action of the brain. His conclusions are embraced in a twelve-page pamphlet, which may be had of the author.

——Dr. F. N. Otis, of New York, has added another to his valuable papers on urethral diseases, in the form of a pamphlet "On Spasmodic Urethral Stricture," reprinted from the *Archives of Dermatology*. It is published by G. P. Putnam's Sons, New York City.

——Dr. Alfred A. Woodhull, U. S. A., has found signal advantage, in intermittents, from the use of one or two grains of ipecacuanha, every three or four hours. His article, "Clinical Studies, with the Non-nauseating use of Ipecacuanha, Chiefly in Intermittents," is reprinted from the *Atlanta Medical and Surgical Journal*.

——The following Reports, etc., have been received:—

Fourteenth Annual Report of the Cincinnati Hospital.

Twelfth Annual Report of the New York Society for the Relief of the Ruptured and Crippled.

Annual Announcement of the Medical Department of the University of Wooster.

Tenth Annual Report of the Illinois Institution for the Education of Feeble-minded Children.

Catalogue of the Albany Medical College.

Annual Report of the Pennsylvania Hospital.

BOOK NOTICES.

Medical Addresses. By Benjamin Eddy Cutting, A.M., M.D., etc. Boston: David Clapp & Son, 1875. 8vo, paper, pp. 123.

The addresses in this volume are three in number, bearing the titles, "Nature in Disease," "Disease a Part of the Plan of Creation," "My First Question as a Medical Student." The author is a naturalist in pathology, and a nihilist in therapeutics; or, to put it more exactly, his leanings are that way. His science is teleological, even to the extent of seeing "evidences of design" in a case of measles. As in all these respects he is in opposition to what seems to be the truest science of the day, we must confine our praise to his style, which is pleasing, and his intentions, which are praiseworthy.

THE

Medical & Surgical Reporter,

A WEEKLY JOURNAL,

Issued every Saturday.

D. G. BRINTON, M. D., EDITOR.

The terms of subscription to the serial publications of this office are as follows, payable in advance:—

Med. and Surg. Reporter (weekly), a year,	$5.00
Half-Yearly Compendium of Med. Science,	3.00
Reporter and Compendium, - - -	7.00
Physician's Daily Pocket Record, - -	1.50
Reporter and Pocket Record, - - -	6.25
Reporter, Comp. and Pocket Record, - -	8.25

For advertising terms address the office.

Marriages and Deaths are inserted free of charge.

All letters should be addressed, and all checks and postal orders be drawn to order of

D. G. BRINTON, M. D.,
115 South Seventh Street,
PHILADELPHIA, PA.

THE EXHAUSTION OF ENERGY.

In the annual address, for 1874, of the President of the American Medical Association, occurs this remark, "Progress is the order of the day—a law of the Universe." No expression is more common. "Through the ages one increasing purpose runs," sings the author of Locksley Hall. And that the story of the world will be worth more as time progresses, is the radical belief of most, even deep thinkers.

But there is not convincing evidence to show it. Every law of nature points precisely to the contrary conclusion. He who figures to himself the history of the Universe as a process of endless evolution and development, a constant ripening into nobler forms and higher truths, does so in the face of all that we certainly know of the laws of force and the past of Universal history. This much talked-of doctrine of evolution, regarded as a general Theory of Things, falls wholly short of the mark. At best, it can hold its own for a brief period in a narrow area.

What is the highest generalization of the nature of matter? It is this: attractive and repulsive forces tending to equilibrium. The whole material universe is covered in this expression, and there is no form or quality of matter, inert or in action, that transcends or contradicts it. Expressed in other terms, it is the theory of the conservation and dissipation of energy, and its meter and sign is the radiation and absorption of *heat* in the cosmical area. All work done, all force, energy, motion or action, is done at the expense of a certain amount of heat drawn directly or indirectly from our only source of heat, the Sun. Stephenson, looking at his engines, traced their motive power directly to this central orb, and whatever lives, moves, and has its being on this planet of ours, derives its life and motion just as straightly from the central orb.

But already the manifest signs of the failing and ultimate extinction of the sun are many. Neptune, Uranus and Saturn, enormous worlds, compared with ours, are far below the temperature necessary to support organic life. Whatever scenes of evolution they once witnessed have disappeared countless ages ago, never to return. Our moon, once the scene of a gigantic play of lava torrents, earthquakes, and life, now drifts, a dead cinder, through the sky. Though we may look hopefully to the thousands of generations yet to come before this fate overtakes our orb, or though we may smile at such a far-off catastrophe and say to ourselves *apres moi le deluge*, he who would bring scientific cosmogonical theories to the test of science, finds here cause to reject some very popular to-day.

What, then, is the scientific teleology, the "doctrine of the last things?" It was well put by Lord Rayleigh, in an address delivered not long since before the Royal Institution in London. After stating the laws of the conservation and dissipation of energy, as laid down by Carnot and Clausius, and applying these to the radiation of heat from the sun

throughout the inter-stellar spaces, he reached the necessary conclusion that in creation there exists a constant dissipation of energy, which will ultimately reduce all existing matter in space to a condition of absolute immobility, to a state of perfect equilibrium.

Such seems to be the only inference which the laws of thermo-dynamics permit. To this material Nirvana, this stability of force, which is synonomous with the absolute doing away with all matter and all force, must we come at last.

There is but one important difficulty in this theory. A condition out of equilibrium presupposes a disturbance of a previous condition in equilibrium; how did that disturbance come about? May it not periodically recur or recrudesce? Knowing nothing of its laws, may it not, as something evidently external to matter, yet profoundly influencing it, still modify, from time to time, thermo-dynamical states as known to us? These are inquiries we cannot put aside, and yet we cannot answer them.

THE RISKS OF OBSTETRICIANS.

Few weeks pass at any time without our noticing one or more deaths of physicians who have fallen victims to infectious diseases. Often where death does not result, prolonged illness, loss of practice, and permanent invalidism are the consequences of such inevitable exposure.

In Great Britain, especial attention has lately been called to the risks incurred by obstetricians. Dr. CAIRNS, in the Edinburgh *Medical Journal*, narrates a most distressing instance of a physician who contracted syphilis of the finger in attending a case of labor. Severe constitutional symptoms followed. We have personally known three such examples among our professional acquaintances. Dr. CAIRNS gives the following precautions:—

1. Never attend a case of labor if there is any abrasion of the skin on the right hand.
2. If any abrasion exists on the right hand, place the patient in the appropriate position, and use the left hand.
3. If not an ambidexter, have the right index finger in all cases covered with gutta-percha tissue soldered together by chloroform, which tissue entirely protects the finger, and does not affect its sensitiveness.
4. In all cases, after each examination, wash the right hand or left, as the case may be, with a solution of carbolic acid or any other good antiseptic.
5. If, after all these appliances, a suspicious sore should occur, have the nail wrenched off immediately and caustic applied to the matrix.

Besides the danger from syphilis, septicæmia may be produced from the lochia. The following case, given by Dr. Wm. STEWART, in the *British Medical Journal*, illustrates how dangerous this may be:—

Miss G., aged 52, a delicate woman, frequently suffering from hepatic derangement, and the subject of an obscure internal abdominal tumor, said to have followed an injury from a railway accident, called me to see her on Sunday, October 8th, 1871. I found her suffering from most excruciating pain in the right fore-finger. The pain was so agonizing that I was led to inquire whether she had not scratched or injured it in any manner, when she informed me she had very slightly scratched that finger and the one next to it a few days previously. Upon remarking further that I was afraid she had received some poisonous matter into the scratch, she then remembered having given an injection to a lying-in woman on the evening of the 6th (about thirty-six hours before my visit), whose nurse was very inexperienced, and had neglected to change the patient for several days after delivery. I was informed by the medical gentleman in attendance upon the confinement, that his patient had peritonitis at the time. My patient had wrapped a piece of adhesive plaster round the middle finger, which was therefore quite unaffected, but unfortunately had left the scratch on the forefinger totally unprotected. Here, then, was the clue to the case—decomposing lochial discharge applied to the recent scratch. This case ran a most acute and rapid course. Thirty-six hours after the application of the septic matter I saw the patient. The finger was hard and indurated, but not much swollen. The back of the hand was very red

and much enlarged. The inflamed lymphatics, in red streaks, could be seen passing up the forearm; and in twelve hours more, in spite of all measures adopted to arrest the advancing disease, the finger had mortified. The next day, her relatives being very anxious, I met in consultation two neighboring medical gentlemen, who agreed with me as to the cause of her symptoms; but the gangrene continuing to spread soon involved the other fingers, hand and wrist, and was followed by a fatal termination on the 10th, being ninety hours from the application of the poison, and about forty-eight hours from the time when I first saw the case. Throughout the short course of her illness the general symptoms were those of high fever, persistent vomiting, and, towards the close, delirium.

When one is mindful of such dangers, the free use of antiseptics and the careful protecting of abraded spots, or the immediate cauterization of such surfaces if exposed, will go far to avoid the risk.

Notes and Comments.

Poisoning by Aniline Dyes.

Several cases of poisoning by the use of stockings and undershirts dyed by coralline, have been reported. A similar one appears in foreign journals, reported from Stettin. A gentleman had bought a hat in a shop there, and, after having worn it for one or two days, was troubled with unbearable headache; at the same time little ulcers formed upon his forehead, his eyes were inflamed, and the whole of the upper part of his head was much swollen. It was evident that these symptoms were caused by the hat, and upon examination by a chemist it was found that the brown leather in the inside of the hat was colored with a poisonous aniline dye. It appears that inflammation is unavoidable when this dye is in contact with any part of the skin.

The Birmingham Institute.

Considerable attention has been attracted, in England, to the action of a scientific medical Society in Birmingham, admitting homœopathists. Various letters were written to the medical and local journals, one of which, by the surgeon, Mr. Lawson Tait, we have been asked to notice. It is too long to give in full, but the following extract shows Mr. Tait's animus:—

"We have admitted a small body of gentlemen to a public institution, from which we have neither legal nor moral right to exclude them. They are men whom we individually respect, whose honesty we have no right to impugn, and whose difference from ourselves, on questions where there is no certainty, we ought to treat with the utmost toleration."

If the Institute had no legal right to exclude, it did well to admit them. But for a homœopathic physician—an honest one—to discuss questions in medical science is as impossible as it is for a professed Evangelist to discuss impartially the inspiration of the Bible. The object of both is not *investigatio veri*, but the *confirmatio veri*, for each starts with the assumption of a dogma. We, however, have determined to banish the discussion of homœopathy from these pages.

The Gorilla.

This anthropoid ape is by no means a ferocious, but a timid brute, according to Mr. Compeigne. This observer also adds, that the gorilla is in no sense an intermediate link between man and animals, but a simple ape; a gigantic ape, it is true, of colossal strength and size, but in no way differing in its ways and habits from the large anthropoid apes, as, for instance, the chimpanzee.

Bromide of Lithium.

The *Revue de Therapeutique* gives the following as the results of Dr. Rouband's tests of this drug:—

1. Bromide of lithium is a drug which has a twofold action. 2. It possesses in a high degree the lithontriptic qualities which are universally recognized in the salts of lithia. 3. It affects reflex sensibility in a more energetic manner than the other bromides, without the unpleasant effects on the heart which the bromide of potassium has. 4. Consequently it takes its place in the first rank of antilithic and sedative drugs, and its action is especially valuable in cases of the uric acid diathesis, which are accompanied by painful phenomena, and in the neuroses which are so often associated with the presence of uric acid.

CORRESPONDENCE.

FOREIGN.

Letter From England.

MANCHESTER, ENGLAND, June 22d, 1875.

ED. MED. AND SURG. REPORTER.

This place is usually left out of the route of the medical tourist, in his journeyings through Great Britain. Though London is the metropolitan city of the Empire, it does not by any means follow that the "provincial" towns hold nothing of interest for the medical man. Many of the lights of British medicine shine in these provincial localities, and one or two of them belong to this city. Mr. William Roberts, whose work on the urinary organs is justly held in much esteem by practitioners, both at home and abroad, lives here, and is in the enjoyment of a large private practice. He is not so old a man as I had expected to find.

He does not look over forty-five, though I find great difficulty in approximating the age of the English men and women, they have, all of them, such an enviable habit of looking ever so many years younger than they really are. He occupies a chair in the medical school of the place, which, by the way, is not in a very flourishing condition, and has a service at the Royal Infirmary. Like all English practitioners, however, he lets the private practice hold the first place in his affections, and gives but a second place to the honors of authorship or teaching. So much engrossed was he in his private practice, that in the preparation of the edition of his book just recently issued, he depended in a very large degree upon the assistance of his friends. Dr. Whitehead, who has written considerably on affections peculiar to females, also lives here, though I did not get the opportunity of seeing him. He has a service at the Children's Hospital. The most important hospital of the place is the Royal Infirmary, which is located on the principal street of the city. It is very large and commodious, and is well supplied with accidents of every description, from the numerous manufactories of Manchester and the neighboring towns. An idea of the amount of material furnished by this hospital may be obtained from the fact that within a circuit of ten miles there are no less than three million people, and these are engaged, for the most part, in manufacturing and mining.

Mr. Thomas Windsor, an ophthalmologist of no inconsiderable reputation, resides here. He is a most erudite man, a complete walking enclycopædia, not only in matters pertaining to his specialty, but also as regards general medicine. He has made translations of various papers from the German, French, Dutch and Italian, and was at one time associate editor with Mr. J. Z. Lawrence, of the *Ophthalmic Review*, a journal which unfortunately suspended publication after issuing but twelve numbers. A more pleasing gentleman it has never been my fortune to meet. He is deeply interested in building up the medical library of Manchester, which, owing almost entirely to his exertions, has already attained to the size of 130,000 volumes. It is rich in old and rare books, some of them of great value. Its collection of Dutch books is said to be the largest and best outside of Holland. He says he finds more difficulty in getting American books than any others. He seems to think that we have no energetic second-hand booksellers, or if so, he has not had the good fortune to find them. His private collection of old and rare books on ophthalmology is very fine. He has nearly all the works of the celebrated Chevalier Taylor, the wandering oculist of the sixteenth century. Some of the illustrations of these books are very quaint, and some have an excellence that is not at all in keeping with our ordinary conception of the primitive art of book illustrating.

Mr. Windsor does not have a service now at the Royal Eye Hospital, but holds a clinic service twice a week at the Royal Infirmary. The Royal Eye Hospital is, next to Moorfield's, in London, the largest Eye Institution in England. Its number of patients yearly is about 8000, and the operations are about 700, of which nearly 200 are for cataract. It has only three surgeons, and the duties of these, as is readily seen, are very onerous. The number of traumatic injuries to the eyes is very large.

I go to London in a few days, from which place I will send you jottings of whatever I may find that I think would be of interest to the large circle of readers of the REPORTER.

SWAN M. BURNETT, M.D.

DOMESTIC.

On "Driving In" Skin Diseases.

ED. MED. AND SURG. REPORTER:—

In the REPORTER for February 20, 1875, page 156, I notice a few comments, under the heading "Is There Danger of Driving in a Skin Disease," at the close of which you intimate a desire to have the subject discussed by some of your readers.

The question, as you remark, is a practical one, and will bear further discussion. I will, therefore, submit a few of my own observations and conclusions on the subject, for publication in the REPORTER, if you deem them worthy of its columns:—

My attention was first called to this subject before I began the study of medicine, by the following occurrence:—

In the summer of 1863 I was boarding with a family in Rochester, Pa., the youngest of whom was a girl about two years old. I noticed that the child was well nourished, and apparently in good health, with the exception of, to me, at that time, a very disgusting eruption, covering the entire scalp with one almost continuous scab.

One evening, shortly after retiring to my

room, I heard a great lamentation in the sitting-room, and upon entering the room to see what was the matter, I found the child was dead.

The mother told me that she had called in a doctor to see the child, on account of the eruption. That the doctor had directed her to poultice the head in order to soften the scabs, so as to enable her to remove them more easily, and prescribed a wash for the head, to be applied after the removal of the scabs.

That she had poulticed the child's head through the day, and not an hour before the child's death had removed the scab and applied the wash. That the child was as well as usual when the wash was applied, and that she did not notice anything wrong with her till she went into a convulsion, and was dead in five minutes. The eruption was "driven in."

The occurrence made a deep impression at the time, but I did not understand its whys and wherefores till since I studied medicine.

Another case that came under my professional observation shortly after I began to practice medicine, is perhaps of sufficient interest to be recorded, as tending to illustrate this subject. I was called to see a child, about two years old, well nourished, bright, and as pretty as a picture, with the exception that it had a breaking out, as its mother called it, on its head. I examined the child and could discover no derangement of the digestive organs, nor any other exciting cause of the eruption, excepting that the child was teething. The child, in other respects, was in perfect health. Having the case I have just narrated before my mind, I explained the case as well as I could to the parents, and prescribing a wash, as a placebo, to satisfy them, concluded to let the breaking out—eczema—take care of itself.

This condition of affairs continued about a month, the eruption getting worse, until the child's head was almost entirely coated with a black, unsightly scab, but in every other particular it was in perfect health.

One day the father of the child called upon me, and in an excited, and rather rough manner, said he wanted me to do something for his child; or, if I could not, to say so, and he would get another doctor. He said some of the old women had been to see it, and they said it was erysipelas. I again explained the nature of the disease to him, and told him that I did not want to heal it up; that the eruption was warding off the disease from the brain; that the child was in perfect health, with the exception of the eruption, and that if the eruption was "driven in" before the teeth were cut, the child would die of disease of the brain before a week. But as he still appeared dissatisfied, I prepared the following wash,

℞. Hydrarg. bichloride, ℈j
Alcohol, ℥iv. M.

And directed that it be applied to the parts affected, lightly, once daily, and to discontinue the application if the eruption appeared to be drying up too rapidly.

In a few days I called to see the child, and found the mother delighted with the rapid drying up of the breaking out. She had applied the wash frequently and freely. I saw at once that the eruption was disappearing, but at the same time I saw unmistakable symptoms of disease of the brain; and notwithstanding my best efforts, aided by good medical counsel, the child died in less than a week, of inflammation of the brain. I regretted very much that I had trusted such an application in the hands of the parents, notwithstanding my care in warning them of the danger of its too frequent, or free application.

The practical conclusion I have arrived at, from the study of these two fatal, and other not fatal cases is, *not* to "drive in" an eruption on children by direct applications, before first removing the exciting cause of the disease, unless in cases dependent on a local irritation. Where the eruption is not dependent on local cutaneous irritation, I have always found the eruption salutary, warding off the disease from more important organs, and acting as a vent, as it were, for an irritation, which, if not allowed to escape in this, not the least dangerous manner, would fall, with fatal effect, upon some vital organ, generally the brain. Nature institutes this affection to protect herself from the dangerous accumulation of an irritation in the system. These eruptions are most frequent during childhood, especially at the time of dentition, a period marked by a greater death-rate than any other in the life of man; but I do not now recall a single instance of death occurring during dentition, if there were at the same time an abundant eruption over the scalp while that process was going on.

As to treatment, I generally let the eruption take care of itself, and give my attention to the removal of all possible causes of irritation. So far as it is practicable, I find that in most cases the eruption is dependent upon some derangement of the digestive organs or irritation of the nervous system—very frequently dentition—and by remedying these difficulties the eruption subsides without any direct local application to the affected parts. I say to the young practitioner (if after having put every organ in a healthy condition, and the child in perfect health, the eruption still continues unsubdued), don't, as you value your little patient's life, attempt to "drive in" the eruption by external local application. Nature will get rid of it just as soon as it will be safe to do so.

Attend to the general condition of the child's health, and let the eruption alone, with the exception of the observance of the rules of cleanliness.

The eruption will not kill the child. I have never known a child to die from the effects of such an eruption. On the other hand, a sudden disappearance of the eruption, without the removal of the exciting cause, is most certain to be followed by disease of the brain or other vital organ, terminating rapidly in death if the eruption cannot be reëstablished.

In conclusion, I would say that a classification of those eruptive diseases incident to childhood, with a direct reference to their exciting cause, would be much more practical, although less scientific, than the one now generally in use, based as it is upon the characteristic form or appearance of the eruption. H. NYE, M.D.

Enon Valley, Pa., June 1st, 1875.

NEWS AND MISCELLANY.

The German Public Health Association.

This Association meets this year in Munich, September 13, 14, and 15. It may interest some of our sanitary readers to know the subjects laid down for discussion. They are as follows:—

1. Determination of a plan to study epidemics of typhus.
2. On the hygienic requirements of new buildings, especially in the new quarters of large cities.
3. Requirements of the diet in orphan asylums, barracks, prisons, and also in common life.
4. On the objects, means and limits of the inspection of bread and meats.
5. On public slaughter houses, with special reference to the duties of communities toward butchers.

The International Medical Congress.

The Organizing Committee of the Medical Congress, which is appointed to meet at Brussels, on September 19th, gives notice that a section of psychological medicine has been created, which will occupy itself with questions bearing reference to mental diseases, the treatment of the insane, etc. The Committee has also decided on organizing an exhibition, to be open during the congress, and near the building where it meets, of new instruments and apparatus used in medicine, surgery, physiology, ophthalmology, etc.

Sunstroke.

Dr. Snow says, in his report as registrar of Providence, for June, 1875,

"There was one death in June, from heat, or sunstroke, as it is popularly called. The decedent was of foreign birth, and recently arrived in this country. I think that investigation would show that nearly, if not quite, all the decedents from sunstroke are of this class. I have known of more than twenty deaths from this cause, and there was not a single decedent among them of American birth; every one was of foreign birth, and not long in this country. This fact is important in connection with the history and causes of this disease."

This does not agree with the experience of the army surgeons. Many native Americans suffered from sunstroke during the war, and we have known a number in private practice.

A Judicious Custom.

Attached to the notice of the death of a little child, of scarlet fever, published in a contemporary, is the following significant warning: "In consequence of the nature of the disease, the funeral service will be private, and, therefore, hour and place are not given." This evidence of good sense, and of feeling for others, on the part of the parents, should entitle them to the increased love of their friends. Malignant diseases are often spread by contact at funerals, simply from the fact that invitations are extended to the services, to old and young, without intimation being given as to the cause of death.

QUERIES AND REPLIES.

EDITOR REPORTER:—In answer to Dr. R. M. H., in REPORTER, May 29th, 1875, I will say that for several years past I have abandoned all Solutions of Morphine for hypodermic use, but carry with me powders, of ¼ and ⅛ gr. each, of Sulph. Morphine. Drop a powder in a teaspoon, charge your syringe with the quantity of water desired, then discharge the water into the spoon, agitate for a moment, and you have a clear, *fresh* solution, free from sediment and all impurities. Draw this solution into the syringe, exhaust the air, and it is ready for use. A little caution should be used to prevent blunting of the point of the needle. I find this the most convenient and *purest* solution that I have ever used. Have never had an accident follow its use. I have a patient under treatment now, that has taken, at least, three hundred doses in this way, and with entire satisfaction to all concerned. S. W. JONES, M. D.

Pine Bluff, Ark.

Dr. M. S., of Mo.—"Can you inform me whether the prolonged use of potassium iodide will loosen the teeth?"

Reply. It has been known occasionally to salivate, but this has been explained by "rendering active the effects of mercury latent in the system." We do not find evidence that it will affect the teeth in non-mercurialized constitutions.

Dr. W. H. O., of Wis.—The nitrite of amyl is applicable in headaches which do *not* depend on cerebral congestions, recent or past. It is contra-indicated in such cases. You will find information about it in the last volume of the REPORTER, pp. 208, 493.

MARRIAGES.

HARRISON—MANN.—At the residence of the bride's parents, near Galena, Ill., June 15, 1875, by the Rev. Jos. Wassell, D.D., W. H. Harrison, M.D., of Apple River, Ill., and Miss L. Annie Mann.

DEATHS.

BECKWITH.—In Angola, N. Y., June 4th, of hemorrhage from the lungs, Oliver W. Beckwith, M. D., aged 57 years. Buried Sunday, the 6th, with Masonic honors.

CURTIS.—On the 17th of June, at the residence of his father, Col. W. B. Curtis, West Liberty, W. Va., J. Montgomery Curtis, M. D., of Moundsville, W. Va., aged 31 years.